

Patent Claims

1. Liquid ring compressor, characterized by an eccentric inner rotor (6) is supported in axles (8, 9) to an outer co-rotor (3) for the liquid ring, where the bearing of the co-rotors (11) is outside the same axles on each side is enclosed in an enclosure where it on each sides of the bearing (11) is arranged a rotating lip seal (82) which lip (83) abut the axles (8, 9) at low speed, and which at high speed is projected due to centrifugal forces out and lifts itself from the axles, where through holes (81) through the co-rotor's sidewalls and bearing enclosure, its volume within the liquid ring is aired to the surrounding enclosure (1), and ensures that it is not created a differential pressure across the bearings and the seals of the bearings.

2. Compressor according to claim 1, characterized by that the rotor (6) in the periphery has a number of cells (61) with half cylindrical shape where the arc is turned towards the centre.

3. Compressor according to claim 1-2, characterized by the cells (61) of the rotor (6) has radial canal openings (62) on each side surrounded of a circular smooth section (63) for sealing against a stationary commutator (7) placed in the centre of the rotor.

4. Compressor according to claim 1-3, characterized by that it from hole (75) in the commutator (7) in the compression sector is injected liquid where liquid beams crush of the rims of the canal opening (62) to the cells (61) of the rotor.

5. Compressor according to claim 1-4, characterized by that the commutator (7) on each side has peripheral grooves (71), where injection liquid exist under pressure and inhibit gas leaks.

6. Compressor according to claim 1-5, characterized by that the periphery of the commutator (7) is outside the co-rotors bearing seals so that leaking water from the gap between the commutator and the rotor is projected out in the liquid ring without passing the bearing seals.

7. Compressor according to claim 1-6, characterized by that the bearings (11) for the co-rotor are of ball or roller bearings types.

8. Compressor according to claim 1-6, characterized by that bearings (11) are slide bearings, including hydrodynamic types.

9. Use of a compressor according to claim 1-8 as an air compressor and water compatible gasses where water is used as injection liquid.

10. Use of a compressor according to claim 1-9 as a compressor in a gas turbine plant.